

LEDERBERG, Joshua (1925 –

"An exact determination of the laws of heredity will probably work more changes in man's outlook on the world, and in his power over Nature, than any other advance in natural knowledge that can be clearly foreseen."

William Bateson, Cambridge, 1902

Lederberg is in competition with Sir Frederick Banting (Nobel 1923) for the title of the youngest Nobel laureate in physiology or medicine. Born in Montclair, New Jersey, Lederberg grew up in New York City where, at age 16, he became a student of Chemistry at Columbia University as a preparation for a medical education.

Graduating in 1944 with a B.A. in Zoology, he served in the U.S. Navy Hospital Reserve until the end of World War II, by which time he had had a taste of medical school. But more importantly, he had kept close contact with his undergraduate professor, Francis Ryan, who had studied at Stanford University at Palo Alto, California, under Edward Tatum (born 1909) and George Beadle (born 1903).

Professor Tatum was moving to Yale University and was joined by the eager Lederberg as a Ph.D. student. Upon graduation from Yale, Lederberg became the head of the new Medical Genetics Department at the University of Wisconsin. He was then recruited by Stanford University to head up their Department of Genetics. While there he was invited to move to New York to the Presidency of Rockefeller University in 1978, at the age of 53.

In the years since his appointment, to the headship of one of the world's most highly regarded research institutions, Joshua Lederberg has been a leader in the development of new approaches to unsolved problems, stretching from his own field of

genetics to the public health problems of the world in need of concentrated research and solution.

Despite his large administrative responsibilities his interests have been maintained in many daunting fields. From his 65th birthday on, he has produced until his 78th birthday, 76 published papers. He excelled in four important studies: "Emerging Infections", "Microbial Threats to Health in the United States", "Emergence, Detection and Response", Institute of Medicine 2003, and "Biological Weapons – Limiting the Threat", MIT Press, 1999 (new edition 2002). He was Editor-in-Chief of the "Encyclopedia of Microbiology" (4 volumes), Academic Press, San Diego, 1992 (2nd edition 2000).

Lederberg's great friend, Dr. J. Murray Luck, a Canadian pillar of Stanford's early biochemical group, introduced a new publication into academic life, "The Excitement and Fascination of Science" when as a founder of *Annual Reviews* in Palo Alto, he published in 1965 in the space of 556 pages, a total of 35 chapters as Autobiographical and Philosophical Essays by discoverers, and by leaders of science. Only the combined genius of Murray Luck and Joshua Lederberg could have pulled together the fascinating personal stories of three dozen researchers and educators in the biological or related sciences. We habitually say, "when the history of this era is written, etc." The fact is that Luck and Lederberg brought that unspoiled picture of the past to us in spades.

The "history of the subject" was being written by the dramatis personae themselves.

In 1978 another pioneering Canadian edited Volume 2 of *Annual Review's* new creation. It too had 35 chapters of "truth rather than fiction" on how research was

overcoming ignorance – it was hoped. However, these two pioneer volumes were put in the shade by the 2-volumes of selections edited by Joshua Lederberg published in 1990 and dedicated "with admiration and affection to J. Murray Luck, founder of Annual Reviews Inc." Volume 3, Part 1, contained 61 autobiographic chapters in 1300 pages, and Part 2, another 948 pages, with 47 life stories. These tomes contain the direct statements of a great number of scientists in disciplines from anthropology to sociology. Clearly more pioneers in science are ready and able to supplement official histories.

As Joshua Lederberg approaches his 80th year of busy life his several hundreds of publications reach a wider public and, happily, they provide perspective for that public, in the rapidly developing world of genetics, in all its ramifications. As a pioneer Nobel Prize Scientist he has become a teacher, not to say "the Injector-General" of nascent ideas into the public forum. He remains a ready source of information and inspiration for students of the human condition, worldwide.